

**REMARKS**

Claim 1 has been amended to incorporate therein certain limitations of claims 3 and 5. Claims 3 and 5 have been canceled. Entry of the amendments at this stage of prosecution is respectfully requested as placing the case in condition for allowance.

Review and reconsideration on the merits are requested.

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 07-195617 (JP '617) in view of U.S. Patent 6,099,924 to Nakamaki et al. or U.S. Patent 6,071,599 to Kosuge et al.

The grounds for rejection remain the same as set forth in the previous Office Action.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendment to claims, the declaration evidence submitted herewith and the following remarks.

The Examiner considered that claim 1 prior to amendment could be easily accomplished from a combination of JP '617 and Nakamaki et al Kosuge et al. Therefore, in order to particularly point out and distinctly claim the subject matter which the Applicants regard as their invention, and to further distinguish over the cited prior art, claim 1 has been amended so as to specify the melting properties of the coating layer as recited in claim 3, and to further specify the dispersion particle diameter of the ethylene polymer as recited in claim 5.

Notwithstanding the above, the Examiner apparently was still of the opinion that Comparative Examples 7 and 8 of the present specification do not adequately demonstrate the unexpected effects of the invention. The Examiner, however, suggested that she would reconsider her position upon a showing of unexpected effects concerning the amount of

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tocopherol, melt viscosity and dispersion particle diameter. To this end, Applicants submit herewith the executed Declaration under 37 C.F.R. § 1.132 of Kazuhiro Sato, a co-inventor of the present application, including comparative test data demonstrating criticality in the amount of tocopherol, melt viscosity and dispersion particle diameter. The significance of the test data is discussed in further detail below.

Claim 1 prior to amendment does not specify the melting properties of the coating layer. The results of the comparative experimentation submitted herewith demonstrate that when the melting properties are not satisfied, the resin-coated metal plate is not formed even when tocopherol and the ethylene polymer are blended. Namely, the effect of the invention is not obtained by the embodiment encompassed by claim 1 prior to amendment herein. On the other hand, the present specification discloses that the melting properties of the coating layer are related to the dispersion particle diameter of the ethylene polymer and to the extrusion properties of the resin. See page 11, line 1 to page 12, line 20.

In the comparative testing presented in the Declaration, additional experiments were conducted to prepare resin-coated metal sheets coated with resins while varying the amount of the tocopherol, melt viscosity and dispersion particle diameter, and to evaluate the resulting resin-coated metal sheets with respect to film-forming property, flat sheet dent ERV test, adhesion, moldability in cans and packaging test and retort treatment test (i.e., the evaluation criteria specified in the present specification).

As shown in the Declaration, all of the evaluation criteria were satisfied by Examples 22 and 23 of the invention in which the amounts of the tocopherol, melt viscosities and dispersion particle diameters of the ethylene polymer were within the ranges of amended claim 1.

In Comparative Example 13, because the dispersion particle diameter of the ethylene polymer was not smaller than 5  $\mu\text{m}$  (i.e., the recitation of claim 5 as incorporated into claim 1), the dent resistance, packaging test and retort resistance were inferior to those of Examples 22 and 23 of the invention. This demonstrates that a dispersion particle diameter of not larger than 5  $\mu\text{m}$  of the ethylene polymer is critical for achieving the effects of the invention.

In Comparative Example 14 and 15 in which the melt viscosities and the dispersion particle diameters of the ethylene polymer were within the ranges of present claim 1 but did not contain tocopherol and in Comparative Example 16 in which the tocopherol was present in an amount in excess of that of the range of present claim 1, the adhesion, packaging test and retort resistance were inferior. This demonstrates that the blending amount (0.05 to 3% by weight) of the tocopherol is critical for achieving the effects of the invention.

In Comparative Example 17 in which the amount of the tocopherol and the melt viscosity were within the ranges of present claim 1 but without being blended with the ethylene polymer, the dent resistance, adhesion, packaging test and retort resistance were inferior. This demonstrates that blending of the ethylene polymer is critical for achieving the effects of the invention.

In Comparative Example 18, the melt viscosity was smaller than that of the claimed range and tocopherol also was not blended. In this case, the melt viscosity was so low that the

ethylene polymer was poorly dispersed, and in any event, the dispersion particle diameter could not be decreased to not larger than 6  $\mu\text{m}$ . Accordingly, the results for Comparative Example 18 were inferior in all respects.

Comparative Example 19 was an attempt to prepare a resin-coated metal sheet containing tocopherol in an amount within the scope of present claim 1 but having a melt viscosity smaller than that of the claimed range as in Comparative Example 18. Like Comparative Example 18, the melt viscosity was too low, and the ethylene polymer was poorly dispersed. Also, the dispersion particle diameter could not be decreased to not larger than 6  $\mu\text{m}$ . Therefore, the results of Comparative Example 19 were unsatisfactory in all respects except for adhesion.

In Comparative Example 20, the dispersion particle diameter of the ethylene polymer and the amount of the tocopherol were within the ranges of present claim 1. However, the melt viscosity was greater than the range specified by the present invention. In this case, the melt viscosity was so large that the torque of the extruder was exceeded, and a cast film could not be obtained.

From the test data as presented in Table A at page 6 of the Declaration, it is clearly seen that the amount of the tocopherol, dispersion particle diameter of the ethylene polymer and the melt viscosity of the coating layer each are critical for producing the resin-coated metal sheet of the present invention satisfying all of the requisite film-forming property, adhesion of the film, dent resistance, corrosion resistance and retort resistance.

The above-noted results establish that the claimed ranges for the amount of tocopherol, dispersion particle diameter of the ethylene polymer and melt viscosity of the coating layer

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achieve unexpected results relative to the prior art, and that the claimed ranges are therefore critical to achieving the effects of the invention.

In view of the amendment to claim 1, the Declaration submitted herewith and the foregoing remarks, it is respectfully submitted that claims 1, 2, 4 and 6-8 are patentable over JP '617 in view of Nakamaki et al or Kosuge et al, and withdrawal of the foregoing rejection under 35 U.S.C. § 102(a) is respectfully requested.

Withdrawal of all rejections and allowance of claims 1, 2, 4 and 6-8 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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